

CLAIMS

1. A divalent antibody fragment comprising two antibody heavy chains
5 and at least one polymer molecule in covalent linkage, each heavy
chain being covalently linked to the other by at least one non-
disulphide interchain bridge linking the sulphur atom of a cysteine
residue in one chain to the sulphur atom of a cysteine residue in the
10 other chain, said cysteine residues being located outside of the
variable region domain of each chain, characterised in that at least
one non-disulphide interchain bridge contains a covalently linked
polymer molecule.
2. An antibody fragment according to Claim 1 in which each heavy
15 chain is covalently linked to the other by a single non-disulphide
bridge, said bridge containing a covalently linked polymer molecule.
3. An antibody fragment according to Claim 1 ~~or Claim 2~~ wherein each
heavy chain is paired with a light chain.
- 20 4. An antibody fragment according to any one of Claims 1 to Claim 3
wherein each heavy chain is a V_H-CH1 chain terminally substituted
by a hinge region domain.
- 25 5. An antibody fragment according to Claim 4 wherein each non-
disulphide bridge present links the sulphur atom of a cysteine residue
located in the hinge region domain of one heavy chain, to the sulphur
atom of a cysteine residue in the hinge region domain of the other
chain.
- 30 6. An antibody fragment according to any one of Claim 1 to Claim 5
wherein the polymer is an optionally substituted straight or branched
chain polyalkylene, polyalkenylene or polyoxyalkylene polymer or a
35 branched or unbranched polysaccharide.

where
is
a chain

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A

Sub A1

Sub A2

Sub A 2

7. An antibody fragment according to Claim 6 wherein the polymer is an optionally substituted straight or branched chain poly(ethylene glycol) or a derivative thereof.

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8. An antibody fragment according to Claim 7 wherein the polymer is methoxy(polyethylene glycol) or a derivative thereof.

9. An antibody fragment according to Claim 8 wherein the polymer has a molecular weight in the range from about 25000Da to about 40000Da.

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Sub A 3

10. An antibody fragment according to any one of the preceding claims wherein each interchain bridge is the residue of a homo- or heterobifunctional cross-linking reagent.

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11. An antibody fragment according to Claim 10 wherein each bridge is an optionally substituted C₄₋₂₀alkylene chain optionally interrupted by one or more heteroatoms or heteroatom-containing groups.

Sub A 4

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12. An antibody fragment according to any one of Claim 1 to Claim 11 which is covalently attached to one or more effector or reporter molecules.

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13. An antibody fragment according to any one of the preceding claims which is able to selectively bind to a cell surface or soluble antigen.

14. An antibody fragment according to Claim 13 wherein the antigen is human tumour necrosis factor- α or a platelet derived growth factor or a receptor thereof.

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15. A pharmaceutical composition comprising an antibody fragment according to any of the preceding claims together with one or more pharmaceutically acceptable excipients, diluents or carriers.

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